



## A 2000-year record of hydrography in the Tagus Prodelta, NW Iberian Margin

**H.B. Bartels-Jónsdóttir** (1,2), A. Voelker (1), T. Rodriques (1), F. Abrantes (1)

(1) Instituto Nacional de Engenharia, Tecnologia e Inovacao, Dept. Geologia Marinha, Alfragide, Portugal

(2) Department of Earth Sciences, University of Aarhus, DK-8000 Århus C, Denmark (helga@eidola.com)

To reconstruct paleohydrographic conditions in the Tagus Prodelta, Portugal, a sediment sequence, covering the last 2000 years, has been studied. The planktonic foraminifera and stable isotopes reflect considerable changes in the surface of the ocean during the last 2000 years.

Between 500 and 1300 AD, the Medieval Warm Period, more enhanced upwelling prevailed, as manifested in the faunal assemblage (*Globigerina bulloides*). During the Little Ice Age species like *Neoglobobulimina pachyderma* dex. and *Ng. pachyderma* sin. maintained higher abundance pointing to colder conditions, probably due to the enhancement and maintenance of the Eastern Boundary Current and the Portuguese/Canary Current transporting cold subpolar waters to the Iberian Margin. The reconstructed SST from *G. bulloides*  $\delta^{18}\text{O}$  reveal high fluctuations in the SST and a sharp increase around 100 years ago. About AD 1900 the warm water species also display rapid increase and *Turborotalita quinqueloba* increases from 4 to 18%, while *G. bulloides* shows a 20% decrease in abundance. A totally new benthic foraminiferal species, *Saidovina karreriana*, appeared in the area at this time, as well as toxic dinoflagellates all pointing to increased pollution and change in the trophic conditions and water masses in the area. Our reconstructed SST show important similarities to other oceanographic records and imply that the changes in the SST are not local but synchronous to other records in the North Atlantic.

Spectral analysis of *G. bulloides*  $\delta^{18}\text{O}$  reveal periods of 24, 19, and less pronounced of 15, 16.5, 17.8, years all of which could be related to sunspot and NAO periodicities.